REMARKS

Claims 1-14 are pending. No new subject matter has been added. Reconsideration of the claims is requested in light of the following remarks.

Claim Rejections – 35 USC 112

Claims 1-9 are rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The rejection is respectfully traversed. However, the Applicant has remove the references to a gateway utilization value and threshold and has also removed the reference to "permanently" refusing the incoming calls and alternative language has been used that more clearly specifies the invention. Therefore claims 1-9 are allowable under 35 USC 112.

Claim Rejections – 35 USC 102

Claims 1-3, 5 and 7-8 are rejected under 35 USC 102(e) as being anticipated by Shaffer et al. The rejection is respectfully traversed, however claims 1, 3 and 7 have been amended to further distinguish over Shaffer.

The mere process of receiving and answering incoming calls can significantly burden the processing capability of a packet processing gateway. The gateway may receive a large number of new incoming calls. Even if most of these calls are eventually dropped, a rather large amount of processing resources are used for handling these new calls. For example, incoming calls are buffered and signaling is sent back to the incoming call even when the call is eventually denied. Using these processing resources for handling incoming calls can severely reduce the bandwidth processing capacity of the gateway and may cause the gateway to drop packets for already established calls. Thus, the gateway is susceptible to denial of service attacks or any other incoming call conditions that may reduce the quality of service for established phone calls.

One aspect of the present invention prevents new incoming calls from substantially effecting the processing capacity of the gateway processor by setting a call deny flag when the present CPU utilization value is larger than the CPU utilization threshold. If the deny flag is set, the processor detects an incoming call and indicates refusal of the incoming call (for example, by generating a busy signal) to the incoming call caller without ever answering the call.

This is clearly stated in the specification on page 4, lines11-13 where a ring flag is set when a new incoming telephone is received (i.e., where the telephone line is "ringing") but before the incoming call is answered. The specification further states that if the CPU

utilization value is found to be greater than the entered and set CPU utilization threshold, then according to a box 290, the incoming call is refused. This can be accomplished in one example by administering a busy signal. Page 5, lines 32-34.

Thus, the gateway generates a busy signal indicating to a caller that the call has been refused without the gateway ever answering the incoming phone call. This prevents the processor in the gateway from using substantial processing capacity responding to incoming calls that the processor never had the bandwidth to handle in the first place.

The Examiner acknowledges that Shaffer only temporarily denies incoming calls when resources in the system are not able to support additional calls (column 3, lines 7-14). Shaffer also specifies the following: "If, on the other hand, a call request is advanced to the front of a first queue but is awaiting advancement in another queue, the resource reservation mechanism 46 reserves the resource associated with the first queue for a predetermined time interval." Col. 6, lines 27-31.

Shaffer also states: "When a call request specifies levels of network resources which are not available at the time the request is made, the system of the present invention enables a caller to camp on to those network resources which are below the requested levels. The call is notified that the call cannot be placed and is provided with an option of camping on to the presently available resource." Col. 5, lines 60-66.

Thus, Shaffer answers each phone call and then camps the call for later processing. Shaffer then reserves whatever resources are currently available for the yet to be processed phone call. Further, even if the call were eventually disconnected, the incoming call is still connected at least for some period of time so that the system in Shaffer can answer the call and communicate camping options to the caller.

Reserving available resources, connecting the incoming call, and camping the incoming calls in a queue all use system resources that reduce processor bandwidth and can cause packets to be dropped for currently established phone calls.

The present invention prevents the gateway from having these reduced quality of service problems by denying incoming calls without ever answering the calls when the deny flag 150 (FIG. 1) is set.

For the reasons stated above, claims 1- 14 are allowable over Shaffer under 35 USC 102(e) and under 35 USC 103(a).

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-14 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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